

WEST VIRGINIA
GEOLOGICAL SURVEY



Table No. 1—Group 2. West Virginia Spring Waters—General Information (Continued).

Spring No.	Name and Location	Owner	Geological Formation	Eleva- tion	Date Observed	Estimated Gallons per minute		Tem- perature °F.
						Time	Date	
LEWIS COUNTY								
141	Alum Spring, Alum Bridge, W. Va.	Chas. Stark, Alum Bridge, W. Va.	Conemaugh.....	800	1-12-36	0.25	.....
WOOD COUNTY								
142	Berland Mineral Wells, at town of same name.....	C. T. Leavitt, Parkersburg, W. Va.	700	12-27-35	0.5	53	.....
143	Mineral Wells, at town of same name.....	Betty White Estate, W. H. Wolfe, Adm., Parkersburg, W. Va.	Salt Sand.....	600	.....	.....	54	
POCAHONTAS COUNTY								
144	Big Spring, Linwood, W. Va.	Eugene Gatewood, Slaty Fork, W. Va.	Greenbrier Limestone.....	2940	12-7-35	300	49	
145	Cave Spring, Head of Swago Creek.....	Withrow McClintock, Marlinton, W. Va.	Basal Greenbrier.....	3450	9-24-35	2000	52	
146	Cochrane Spring, 1.5 mi. W. of Onoto, W. Va.	Porter Sharp, Onoto, W. Va.	Basal Greenbrier.....	2500	12-7-35	500	49	
147	Garfield Grimes Spring, 2 mi. E. of Dunmore, W. Va.	Garfield Grimes, Dunmore, W. Va.	Helderberg-Orikany Contact.....	2550	12-7-35	75	58	
148	C. D. Bussard Spring, 1.1 mi. S. E. of Dunmore, along Highway.....	A. A. Bussard, Dunmore, W. Va.	Siltina.....	2600	12-7-35	30	49	
149	Gibson Spring, 0.5 mi. W. of Frost, W. Va.	Sherman Gibson, Frost, W. Va.	Helderberg Limestone.....	2500	12-6-36	60	50	
150	Adam Moore Chalybeate, Head of Sharp Run.....	Adam Moore, Campbelltown, W. Va.	Macrasy Series.....	2350	12-7-35	51	51	
151	Sharp Spring, 1.5 mi. W. of Campbelltown, W. Va.	James A. Sharp, Campbelltown, W. Va.	Basal Greenbrier.....	2450	12-7-35	1000	50	
WEBSTER COUNTY								
152	Wm. Smith Well, Dottown, Webster Springs, W. Va.	John Hoover, Webster Springs, W. Va.	Alderson Limestone of Greenbrier Greenbrier Series.....	1460 71' deep	1-12-36	0.5	44	

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POCAHONTAS COUNTY

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| 144 | Big Spring, Linwood, W. Va..... | Eu |
| 145 | Cave Spring, Head of Swago Creek..... | Wi |
| 146 | Cochrane Spring, 1.5 mi. W. of Onoto, W. Va..... | Po |
| 147 | Garfield Grimes Spring, 2 mi. E. of Dunmore, W. Va.. | Ge |
| 148 | C. D. Buzzard Spring, 1.1 mi. S. E. of Dunmore,
along Highway..... | A |
| 149 | Gibson Spring, 0.5 mi. W. of Frost, W. Va..... | S |
| 150 | Adam Moore Chalybeate, Head of Sharp Run..... | A |
| 151 | Sharp Spring, 1.5 mi. W. of Campbelltown, W. Va.... | J |

WEBSTER COUNTY

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| 152 | Wm. Smith Well, Dorrtown, Webster Springs, W Va.. | J |
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WEST VIRGINIA

Owner	Geological Formation	Eleva-tion	Date Observed	per minute	Tem-perature °P.
Chas. Stark, Alum Bridge, W. Va.	Conemaugh.....	800	1-12-36	0.25	
C. T. Leavitt, Parkersburg, W. Va.	.....	700	12-27-35	0.5	53
Betty Waite Estate, W. H. Wolfe, Adm., Parkersburg, W. Va.	Salt Sand.....	600 300' deep	12-27-35	.....	54
Eugene Gatewood, Slaty Fork, W. Va.	Greenbrier Limestone.....	2940	12- 7-35	300	49
Withrow McClintock, Marlinton, W. Va.	Basal Greenbrier.....	3450	9-24-35	2000	52
Porter Sharp, Onoto, W. Va.	Basal Greenbrier.....	2500	12- 7-35	500	49
Va. Garfield Grimes, Dunmore, W. Va.	Helderberg-Oriskany Contact ...	2550	12- 7-35	75	58
A. A. Buzzard, Dunmore, W. Va.	Salina.....	2600	12- 7-35	30	49
Sherman Gibson, Frost, W. Va.	Helderberg Limestone.....	2500	12- 6-35	500	50
Adam Moore, Campbelltown, W. Va.	Maccrady Series.....	2350	12- 7-35	0.5	51
James A. Sharp, Campbelltown, W. Va.	Basal Greenbrier.....	2450	12- 7-35	1000	50
Va. John Hoover, Webster Springs, W. Va.	Alderson Limestone of Greenbrier Greenbrier Series	1460 71.5' deep	1-12-36	0.5	46

Table No. 4. West Virginia Spring Waters—Chemical Analyses—in parts per million (Continued).
SPRINGS OF WEST VIRGINIA

Number No.	Name and Location	Iodide after Evap- oration Loss SO ₂	Bottled (Pb, Al ₂ O ₃)										Total Of Deter- mined Constit- uents	Total Of Deter- mined Constit- uents Analyst			
			Fe	Ca	Mg	Na	K	HCO ₃	SO ₄	Cl	NO ₃	H ₂ S					
HANDY COUNTY																	
27	Brownie's Lick Spring, about 4 mi. W. of Mathias, W. Va.	32	213	36	.....	trace	8.4	4.8	68	2.0	200	26	1.9	None	4	320	RAB
GRANT COUNTY																	
28	Johanna Run Spring, Head of Johnson Run	46	410	13	2.5	.....	104	15	8	.....	205	140	1.7	1.5	None	496.7	M & H
29	Spring Run Spring, Head of Spring Run	22	146	6	5.5	.....	47	6.4	*2.9	.....	143	10	1	1.3	None	223.1	JBM
PENDLETON COUNTY																	
30	Falling Spring, about 0.5 mi. W. of Lone Poplar Spring	60	128	5.5	1.6	.....	39	4.4	*0.0	.....	129	7.4	1.1	0.75	None	195.35	JBM
31	Phenix Spring, 5 mi. S. of Franklin, W. Va.	0.2	93	8.8	(0.95)	0.38	28	1.7	1.0	1	85	6.5	0.79	0.75	None	134.82	JBM
32	Thorn Spring, Remington Grounds	1.6	117	7.2	(0.7)	0.38	38	3.6	0.95	0.88	124	5.8	0.65	1.	None	182.76	JBM
POCAHONTAS COUNTY																	
33	Averill Spring, Hedgesdam, W. Va.	48	170	18	3.2	.....	34	5.3	*2.5	.....	122	6.9	0.9	3	None	195.8	JBM
34	Bear Creek Spring, 6 mi. W. of Huntersville, W. Va.	6.5	175	11	(2.0)	1.3	30	10	19	2.2	156	24	6.3	0.05	2.4	262.35	JBM
35	Curry Spring, 0.3 mi. E. of Huntersville, W. Va.	1.8	71	7	(0.9)	0.63	23	1.3	2.3	0.21	75	1.3	0.63	0.75	None	112.12	JBM
36	Dunmore Drinking Spring, Dunmore, W. Va.	21	182	7.3	2.3	.....	45	8.4	*2.8	.....	114	45	0.86	0.1	None	225.76	JBM
37	Dunmore Meadow Spring, Dunmore, W. Va.	14	108	9.4	2.4	.....	49	9.5	*3.1	.....	114	55	0.95	trace	None	243.35	JBM
38	Dunmore Pool Supply Spring, Dunmore, W. Va.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Table No. 4. West Virginia Spring Waters—Chemical Analyses—in parts per million (Continued).
SPRINGS OF WEST VIRGINIA

30	Fanning Spring, about 0.3 mi. W. of Lone Poplar Spring.....	60
31	Pitsenbarger Spring, 5 mi. S. of Franklin, W. Va.....	0
32	Thorn Spring, Reunion Grounds.....	1

POCAHONTAS COUNTY

33	Averill Spring, Hepsedam, W. Va.....	4
34	Beaver Creek Sulphur Spring, 6 mi. W. of Huntersville, W. Va.....	
35	Curry Spring, 0.3 mi. E. of Huntersville, W. Va.....	
36	Dunmore Drinking Spring, Dunmore, W. Va	2
37	Dunmore Meadow Springs, Dunmore, W. Va.....	
38	Dunmore Pool Supply Springs, Dunmore, W. Va.....	

Table No. 4. West Virginia Spring Waters—Chemical Analyses—in parts per million (Continued).

Sample No.	Name and Location	Igni- tion Loss	Solids after Evap- oration						Total Of Deter- mined Constit- uents								
			SiO ₂	(Fe) ₂ O ₃	Al ₂ O ₃	Fe	Ca	Mg	Na	K	HCO ₃	SO ₄	Cl	NO ₃	H ₂ S	Analyst	
POCAHONTAS COUNTY (Cont.)																	
30	McLaughlin Spring, Hedgesville, W. Va.	19	70	9	.....	8.0	18	3.1	3.3	0.93	56	7.2	0.4	1.7	None	307.63	HAH
31	Minnehaha Spring, Minnehaha Springs, W. Va.	13	162	10	.....	0.84	40	6.5	5.6	3.5	115	34	1.5	0.2	None	217.14	HAH
32	Peter McCarthy Spring, 6 mi. N. E. of Huntersville, W. Va. (No estimate)	.....	666	17	.....	0.005	155	45	9.8	2.6	120	438	2.3	None	None	759.705	HAH
33	Warwick Sulphur Spring, Edray, W. Va.	52	370	5.4	2.0	.....	84	18	*12	.....	221	107	11	0.2	7.2	407.8	JBM
WEBSTER COUNTY																	
43	Addresson McLaughlin Well, Webster Springs, W. Va.	430	6162	14	.....	0.09	155	46	2006	57	244	51	3459.	6.3	20.	6558.39	HAH
44	Fork Lick Spring, Webster Springs, W. Va.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.	+	.....	HAH
45	W. B. Tracy Well, Webster Springs, W. Va.	632	5497	15	.....	0.18	125	38	1016.	60.	276	4.5	3107.	5	1.	5616.68	HAH
GREENBRIER COUNTY																	
46	Alvion Springs Nos. 1 and 2, Alvion, W. Va.	8	88	7.5	.....	.15	25	4.5	2.2	2.2	88	5.1	1.9	0.25	None	116.8	HAH
47	Black Sulphur Spring, White Sulphur Springs, W. Va.	155	2218	17	.....	1.1	439	125.	22.	1.2	205	1416.	17.	None	12.5	2255.8	HAH
48	Blue Sulphur Spring, Blue Sulphur Springs, W. Va.	121	1652	24	.....	0.24	299	40	110	4.0	190	815	58.	None	7.2	1565.46	HAH
49	Chalybeate Spring, White Sulphur Springs, W. Va.	16	88	4	.....	4.5	7	1.0	2.4	1.6	Acid	43	trace	None	None	64.41	HAH
50	White Sulphur Spring, White Sulphur Springs, W. Va.	338	2657	17.	2.0	.....	362	84.	*66	.....	236	1355	16.	.....	9.4	2169.4	HAH
MONROE COUNTY																	
51	Iodine Spring, Salt Sulphur Springs, W. Va.	367	2672	24.	3.1	.....	430	90	*173	.....	339	1378	63.	None	9.6	2545.73	HAH
52	Old Sweet Spring, Sweet Springs, W. Va.	111	813	18	1.1	.....	298	58	*36	.....	715	435	27.	None	None	1583.1	HAH
53	Red Sulphur Spring, Red Sulphur Springs, W. Va.	95	310	15	.....	8	49	21.	30	1.3	264	84	2.2	0.3	18.2	408.02	HAH
54	Salt Sulphur Spring, Salt Sulphur Springs, W. Va.	328	3275	29	0.21	526	142	236	11.0	251	1975	120.	None	39	3320.21	HAH

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No.

Name and Location

POCAHONTAS COUNTY (Cont.)

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|----|--|
| 39 | McLaughlin Springs, Hepsedam, W. Va..... |
| 40 | Minnehaha Spring, Minnehaha Springs, W. Va..... |
| 41 | Peter McCarthy Spring, 6 mi. N. E. of Huntersville, W.
(No estimate)..... |
| 42 | Warwick Sulphur Spring, Edray, W. Va..... |

WEBSTER COUNTY

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| 43 | Addison McLaughlin Well, Webster Springs, W. Va..... |
| 44 | Fork Lick Spring, Webster Springs, W. Va..... |
| 45 | W. B. Tracy Well, Webster Springs, W. Va..... |

Spring No. 34. Beaver Creek Sulphur Spring.

Location: 6 miles west of Huntersville, Pocahontas County.

Physical Data.

Elevation: 2470'.

Geological Horizon: Portage Group Shale.

Temperature: Date observed, 6-2-35, 57.2° F.; 9-24-35, 59.0° F.

Rate of flow: Date observed, 6-2-35, 0.5 gallon per minute.

Owner: Lee Simms, Huntersville, W. Va.

Chemical Analysis.

Analyst: John B. McCue.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation	175.0
Ignition loss	6.5
Silica (SiO_2)	11.0
Ferric oxide and Alumina ($\text{Fe}, \text{Al}_2\text{O}_3$)	(2.0)
Iron (Fe)	1.3
Calcium (Ca)	30.0
Magnesium (Mg)	10.0
Sodium (Na)	19.0
Potassium (K)	2.2
Bicarbonate (HCO_3)	156.0
Sulfate (SO_4)	24.0
Chloride (Cl)	6.3
Nitrate (NO_3)	0.05
Hydrogen sulfide gas (H_2S)	2.4
Total of determined constituents	262.25

Remarks: Calcic—sodic—sulphuretted.

Comments: This is one of the very few sulphur waters in a county noted for the number and variety of its springs. It is located near the new Watoga State Park and is in a very poor condition. If cleaned out and properly curbed, it might prove very popular with vacationists visiting the Park.

Spring No. 35. Curry Spring.

Location: By roadside at home of Sherman P. Curry, 0.3 mile east of Huntersville, Pocahontas County.

Physical Data.

Elevation: 2260'.

Geological Horizon: Helderberg Limestone.

Temperature: Date observed, 6-2-35, 49.1° F.; 9-23-25, 50.5° F.

Rate of flow: Date observed: 6-2-35, 30 gallons per minute.

Owner: Sherman P. Curry, Huntersville, W. Va.

Spring No. 34. Beaver Creek Sulphur Spring.

Location: 6 miles west of Huntersville, Pocahontas County.

Physical Data.

Elevation: 2470'.
 Geological Horizon: Portage Group Shale.
 Temperature: Date observed, 6-2-35, 57.2° F.; 9-24-35, 59.0° F.
 Rate of flow: Date observed, 6-2-35, 0.5 gallon per minute.
 Owner: Lee Simms, Huntersville, W. Va.

Chemical Analysis.

Analyst: John B. McCue.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation	175.0
Ignition loss	6.5
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Silica (SiO_2)	11.0
Ferric oxide and Alumina ($\text{Fe}, \text{Al}_2\text{O}_3$)	(2.0)
Iron (Fe)	1.3
Calcium (Ca)	30.0
Magnesium (Mg)	10.0
Sodium (Na)	19.0
Potassium (K)	2.9
Bicarbonate (HCO_3)	156.0
Sulfate (SO_4)	24.0
Chloride (Cl)	6.3
Nitrate (NO_3)	0.05
Hydrogen sulfide gas (H_2S)	2.4
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Total of determined constituents	262.25

Remarks: Calcic—sodic—sulphuretted.

Comments: This is one of the very few sulphur waters in a county noted for the number and variety of its springs. It is located near the new Watoga State Park and is in a very poor condition. If cleaned out and properly curbed, it might prove very popular with vacationists visiting the Park.

Spring No. 35. Curry Spring.

Location: By roadside at home of Sherman P. Curry, 0.3 mile east of Huntersville, Pocahontas County.

Physical Data.

Elevation: 2260'.
 Geological Horizon: Heldberg Limestone.
 Temperature: Date observed, 6-2-35, 49.1° F.; 9-23-25, 50.5° F.
 Rate of flow: Date observed: 6-2-35, 30 gallons per minute.
 Owner: Sherman P. Curry, Huntersville, W. Va.

Spring No. 34. Beaver Creek Sulphur Spring.

Location: 6 miles west of Huntersville, Pocahontas County.

Physical Data.

Elevation: 2470'.

Geological Horizon: Portage Group Shale.

Temperature: Date observed, 6-2-35, 57.2° F.; 9-24-35, 59.0° F.

Rate of flow: Date observed, 6-2-35, 0.5 gallon per minute.

Owner: Lee Simms, Huntersville, W. Va.

Chemical Analysis.

Analyst: John B. McCue.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation.....	175.0
Ignition loss.....	6.5

Chemical Analysis.

Analyst: John B. McCue.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation.....	175.0
Ignition loss.....	6.5

Silica (SiO_2).....	11.0
Ferric oxide and Alumina ($(\text{Fe}, \text{Al})_2\text{O}_3$).....	(2.0)
Iron (Fe).....	1.3
Calcium (Ca).....	30.0
Magnesium (Mg).....	10.0
Sodium (Na).....	19.0
Potassium (K).....	2.2
Bicarbonate (HCO_3).....	156.0
Sulfate (SO_4).....	24.0
Chloride (Cl).....	6.3
Nitrate (NO_3).....	0.05
Hydrogen sulfide gas (H_2S).....	2.4

Total of determined constituents.....	262.25

Remarks: Calcic—sodic—sulphuretted.**Comments:** This is one of the very few sulphur waters in a county noted for the number and variety of its springs. It is located near the new Watoga State Park and is in a very poor condition. If cleaned out and properly curbed it might prove very popular with

Sodium (Na).....	10.0
Potassium (K).....	19.0
Bicarbonate (HCO_3).....	2.2
Sulfate (SO_4).....	156.0
Chloride (Cl).....	24.0
Nitrate (NO_3).....	6.3
Hydrogen sulfide gas (H_2S).....	0.05
	2.4
Total of determined constituents.....	262.25

Remarks: Calcic—sodic—sulphuretted.

Comments: This is one of the very few sulphur waters in a county noted for the number and variety of its springs. It is located near the new Watoga State Park and is in a very poor condition. If cleaned out and properly curbed, it might prove very popular with vacationists visiting the Park.

Spring No. 35. Curry Spring.

Location: By roadside at home of Sherman P. Curry, 0.3 mile east of Huntersville, Pocahontas County.

Physical Data.

Elevation: 2260'.

Geological Horizon: Helderberg Limestone.

Temperature: Date observed, 6-2-35, 49.1° F.; 9-23-25, 50.5° F.

Rate of flow: Date observed: 6-2-35, 30 gallons per minute.

Owner—Sherman P. Curry, Huntersville, W. Va.

near the new Watoga State Park and is in a very poor condition. If cleaned out and properly curbed, it might prove very popular with vacationists visiting the Park.

Spring No. 35. Curry Spring.

Location: By roadside at home of Sherman P. Curry, 0.3 mile east of Huntersville, Pocahontas County.

Physical Data.

Elevation: 2260'.

Geological Horizon: Helderberg Limestone.

Temperature: Date observed, 6-2-35, 49.1° F.; 9-23-25, 50.5° F.

Rate of flow: Date observed: 6-2-35, 30 gallons per minute.

Owner: Sherman P. Curry, Huntersville, W. Va.

Chemical Analysis.

Analyst: John B. McCue.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation.....	71.0
Ignition loss.....	1.8

Silica (SiO_2).....	7.0
Ferric oxide and Alumina ($(\text{Fe}, \text{Al})_2\text{O}_3$).....	(0.9)
Iron (Fe).....	0.63
Calcium (Ca).....	23.0
Magnesium (Mg).....	1.3
Sodium (Na).....	2.3
Potassium (K).....	0.21
Bicarbonate (HCO_3).....	75.0
Sulfate (SO_4).....	1.3
Chloride (Cl).....	0.63
Nitrate (NO_3).....	0.75
Manganese (Mn).....	None
Hydrogen sulfide gas (H_2S).....	None

Total of determined constituents.....	112.12

Remarks: Very few solids for a limestone water.

Comments: Curbed with concrete and covered with a wooden roof. A ram, operated by the flow, pumps water for Mr. Curry's use.

Chemical Analysis.

Analyst: John B. McCue.

<i>Constituent.</i>	Parts per Million.
Solids after evaporation	71.0
Ignition loss	1.8
Silica (SiO_2)	7.0
Ferric oxide and Alumina ($(\text{Fe}, \text{Al})_2\text{O}_3$)	(0.9)
Iron (Fe)	0.63
Calcium (Ca)	23.0
Magnesium (Mg)	1.3
Sodium (Na)	2.3
Potassium (K)	0.21
Bicarbonate (HCO_3)	75.0
Sulfate (SO_4)	1.3
Chloride (Cl)	0.63
Nitrate (NO_3)	0.75
Manganese (Mn)	None
Hydrogen sulfide gas (H_2S)	None
Total of determined constituents	112.12

Remarks: Very few solids for a limestone water.

Comments: Curbed with concrete and covered with a wooden roof. A ram, operated by the flow, pumps water for Mr. Curry's use.

Spring No. 36. Dunmore Spring (Drinking).

Location: Dunmore, Pocahontas County.

Physical Data.

Elevation: 2500'.

Geological Horizon: Bossardville-Helderberg Limestone contact.

Temperature: Date observed, 6-2-35, 63.0° F.; 9-2-35, 62.5° F.

Rate of flow: Date observed, 6-2-35, 30 gallons per minute.

Owner: J. W. Price, M. D., Marlinton, W. Va.

Chemical Analysis.

Analyst: John B. McCue.

<i>Constituent.</i>	Parts per Million.
Solids after evaporation	182.0
Ignition loss	21.0
Silica (SiO_2)	7.3
Ferric oxide and Alumina ($(\text{Fe}, \text{Al})_2\text{O}_3$)	2.3
Calcium (Ca)	45.0
Magnesium (Mg)	8.4
Sodium (Na) and Potassium (K)	2.8
Bicarbonate (HCO_3)	114.0
Sulfate (SO_4)	45.0

Remarks: Very few solids for a limestone water.

Comments: Curbed with concrete and covered with a wooden roof. A ram, operated by the flow, pumps water for Mr. Curry's use.

Spring No. 36. Dunmore Spring (Drinking).

Location: Dunmore, Pocahontas County.

Physical Data.

Elevation: 2500'.

Geological Horizon: Bossardville-Helderberg Limestone contact.

Temperature: Date observed, 6-2-35, 63.0° F.; 9-2-35, 62.5° F.

Rate of flow: Date observed, 6-2-35, 30 gallons per minute.

Owner: J. W. Price, M. D., Marlinton, W. Va.

Chemical Analysis.

Analyst: John B. McCue.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation.....	182.0
Ignition loss.....	21.0

Silica (SiO_2).....	7.3
Ferric oxide and Alumina ($(\text{Fe}, \text{Al})_2\text{O}_3$).....	2.3
Calcium (Ca).....	45.0
Magnesium (Mg).....	8.4
Sodium (Na) and Potassium (K).....	2.8
Bicarbonate (HCO_3).....	114.0
Sulfate (SO_4).....	45.0

Chloride (Cl)	0.86
Nitrate (NO ₃)	0.10
Manganese (Mn)	Trace
Hydrogen sulfide gas (H ₂ S)	None
Total of determined constituents	225.76

Remarks: Calcic—sodic—alkaline.

Comments: This is a fine, potable water for table use. Samples that have stood several months show no deposited sediment. The mineral content varies but little from year to year. See attached analysis.

Spring No. 36. Dunmore Drinking Spring (Reece Prichard Spring).

Location: 0.8 mile southeast of Dunmore, Pocahontas County.

Physical Data.

Geological Horizon: Bossardville Limestone.

Chemical Analysis.

Analyst: B. B. Kaplan, Survey Chemist.

Constituent.	Parts per Million.
Ignition loss	66.44
Calcium (Ca)	32.72
Magnesium (Mg)	6.02
Carbonate (CO ₃)	49.02
Sulfate (SO ₄)	23.74
Sulphur trioxide (SO ₃)	48.66
Total of determined constituents	160.16

Remarks: Recalculated to p. p. m. by B. R. Drake from an analysis quoted in "Detailed Report on Pocahontas County", W. Va. Geological Survey, (1929).

Spring No. 37. Meadow Spring.

Location: At Dunmore, Pocahontas County.

Physical Data.

Elevation: 2500'.

Geological Horizon: Bossardville-Helderberg Limestone contact.

Temperature: Date observed, 5-2-35, 66.2° F.

Rate of flow: Date observed, 5-2-35, 200 gallons per minute.

Owner: J. W. Price, M. D., Marlinton, W. Va.

Chemical Analysis.

Analyst: John B. McCue.

SPRINGS OF WEST VIRGINIA

Chloride (Cl).....	0.86
Nitrate (NO ₃).....	0.10
Manganese (Mn).....	Trace
Hydrogen sulfide gas (H ₂ S).....	None
Total of determined constituents	225.76

Remarks: Calcic—sodic—alkaline.

Comments: This is a fine, potable water for table use. Samples that have stood several months show no deposited sediment. The mineral content varies but little from year to year. See attached analysis.

**Spring No. 36. Dunmore Drinking Spring (Reece
Prichard Spring).**

Location: 0.8 mile southeast of Dunmore, Pocahontas County.

Physical Data.

Geological Horizon: Bossardville Limestone.

that have stood several months show no deposited sediment. The mineral content varies but little from year to year. See attached analysis.

Spring No. 36. Dunmore Drinking Spring (Reece Prichard Spring).

Location: 0.8 mile southeast of Dunmore, Pocahontas County.

Physical Data.

Geological Horizon: Bossardville Limestone.

Chemical Analysis.

Analyst: B. B. Kaplan, Survey Chemist.

<i>Constituent.</i>	<i>Parts per Million.</i>
Ignition loss.....	66.44
Calcium (Ca).....	32.72
Magnesium (Mg).....	6.02
Carbonate (CO ₃).....	49.02
Sulfate (SO ₄).....	23.74
Sulphur trioxide (SO ₃).....	48.66
Total of determined constituents.....	160.16

Remarks: Recalculated to p. p. m. by B. R. Drake from an analysis quoted in "Detailed Report on Pocahontas County", W. Va. Geological Survey, (1929).

Spring No. 37. Meadow Spring.

Remarks: Recalculated to p. p. m. by B. R. Drake from an analysis quoted in "Detailed Report on Pocahontas County", W. Va. Geological Survey, (1929).

Spring No. 37. Meadow Spring.

Location: At Dunmore, Pocahontas County.

Physical Data.

Elevation: 2500'.

Geological Horizon: Bossardville-Helderberg Limestone contact.

Temperature: Date observed, 5-2-35, 66.2° F.

Rate of flow: Date observed, 5-2-35, 200 gallons per minute.

Owner: J. W. Price, M. D., Marlinton, W. Va.

Chemical Analysis.

Analyst: John B. McCue.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation	198.0
Ignition loss	14.0

Silica (SiO_2)	9.4
Ferric oxide and Alumina ($(\text{Fe}, \text{Al})_2\text{O}_3$)	2.4
Calcium (Ca)	49.0
Magnesium (Mg)	9.5
Sodium (Na) and Potassium (K)	3.1
Bicarbonate (HCO_3)	114.0
Sulfate (SO_4)	55.0
Chloride (Cl)	0.95
Nitrate (NO_3)	Trace
Manganese (Mn)	Trace
Hydrogen sulfide gas (H_2S)	None

Total of determined constituents	243.35

Remarks: Calcic—alkaline—sodic.

Comments: Rises in a meadow beyond No. 36. Is not used and is not protected in any manner.

Spring No. 38. Upper Spring.

Location: At Dunmore, Pocahontas County.

~~Comments.~~ ~~None~~ beyond no. 36. Is not used and is not protected in any manner.

Spring No. 38. Upper Spring.

Location: At Dunmore, Pocahontas County.

Physical Data.

Elevation: 2500'.

Geological Horizon: Bossardville-Helderberg Limestone contact.

Temperature: Date observed, 9-23-35, 62.5° F.

Owner: J. W. Price, M. D., Marlinton, W. Va.

Comments: The level of the pool of this spring was raised by a dam in 1933 so that water would flow by gravity to a swimming pool. In the pool of the spring, Mrs. Anna Price Hunter erected a statue from her own design, which represents an Indian giving thanks for the gift of this water. The owners have erected the swimming pool just mentioned, a bath-house, and a tastefully designed refreshment stand near by, making the spot very attractive to vacationists and passers-by. Cress is grown for sale in the water flowing from this spring and periwinkles thrive in it—one of the few places in West Virginia where they may be found. See photograph.

Spring No. 39. Largest McLaughlin Spring.

Location: Near Hepsedam State Fish Hatchery, Pocahontas County.

thanks for the gush in this water. The owners have erected the swimming pool just mentioned, a bath-house, and a tastefully designed refreshment stand near by, making the spot very attractive to vacationists and passers-by. Cress is grown for sale in the water flowing from this spring and periwinkles thrive in it—one of the few places in West Virginia where they may be found. See photograph.

Spring No. 39. Largest McLaughlin Spring.

Location: Near Hepsedam State Fish Hatchery, Pocahontas County.

Physical Data.

Elevation: 2360'.

Geological Horizon: Greenbrier Limestone.

Temperature: Date observed, 6-2-35, 50.2° F.; 9-24-35, 52.5° F.

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Rate of flow: Date observed, 6-2-35, 2000 gallons per minute.
 Owner: Bank of Marlinton, Marlinton, W. Va.

Chemical Analysis.

Analyst: Homer A. Hoskins.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation	70.0
Ignition loss	19.0

Silica (SiO_2)	9.0
Iron (Fe)	8.0
Calcium (Ca)	18.0
Magnesium (Mg)	3.1
Sodium (Na)	3.3
Potassium (K)	0.93
Bicarbonate (HCO_3)	56.0
Sulfate (SO_4)	7.2
Chloride (Cl)	0.4
Nitrate (NO_3)	1.7
Manganese (Mn)	None
Hydrogen sulfide gas (H_2S)	None

Total of determined constituents	107.63

Comments: Typical of the large springs of the basal Greenbrier. Flow averages 1500 to 2000 gallons per minute and varies seasonally somewhat, but never goes dry. Unprotected.

Sulfate (SO ₄)	96.0
Chloride (Cl)	7.2
Nitrate (NO ₃)	0.4
Manganese (Mn)	1.7
Hydrogen sulfide gas (H ₂ S)	None
	None
Total of determined constituents	107.63

Comments: Typical of the large springs of the basal Greenbrier. Flow averages 1500 to 2000 gallons per minute and varies seasonally somewhat, but never goes dry. Unprotected.

Spring No. 40. Minnehaha Spring.

Location: At Minnehaha Springs, Pocahontas County.

Physical Data.

Elevation: 2340'.

Geological Horizon: Marcellus-Oriskany contact.

Temperature: Date observed, 6-1-35, 70.5° F.; 9-23-35, 72.0° F.

Rate of flow: Date observed, 6-1-35, 1000 gallons per minute.

Owner: Richter & Johnson, Washington, D. C.

Chemical Analysis.

Analyst: Homer A. Hoskins.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation	162.0
Ignition loss	13.0
Silica (SiO ₂)	10.0
Iron (Fe)	0.84
Calcium (Ca)	40.0
Magnesium (Mg)	6.5
Sodium (Na)	5.6

Spring No. 40. Minnehaha Spring.

Location: At Minnehaha Springs, Pocahontas County.

Physical Data.

Elevation: 2340'.

Geological Horizon: Marcellus-Oriskany contact.

Temperature: Date observed, 6-1-35, 70.5° F.; 9-23-35, 72.0° F.

Rate of flow: Date observed, 6-1-35, 1000 gallons per minute.

Owner: Richter & Johnson, Washington, D. C.

Chemical Analysis.

Analyst: Homer A. Hoskins.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation.....	162.0
Ignition loss	13.0
<hr/>	
Silica (SiO ₂).....	10.0
Iron (Fe).....	0.84
Calcium (Ca).....	40.0
Magnesium (Mg).....	6.5
Sodium (Na).....	5.6
Potassium (K).....	3.5

Rate of flow: Date observed, 6-2-35, 2000 gallons per minute.
 Owner: Bank of Marlinton, Marlinton, W. Va.

Chemical Analysis.

Analyst: Homer A. Hoskins.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation	70.0
Ignition loss	19.6
	—
Silica (SiO_2)	9.6
Iron (Fe)	8.0
Calcium (Ca)	18.0
Magnesium (Mg)	3.1
Sodium (Na)	3.3
Potassium (K)	0.93
Bicarbonate (HCO_3^-)	56.0
Sulfate (SO_4^{2-})	7.2
Chloride (Cl^-)	0.4
Nitrate (NO_3^-)	1.7
Manganese (Mn)	None
Hydrogen sulfide gas (H_2S)	None
	—
Total of determined constituents	107.63

Comments: Typical of the large springs of the basal Greenbrier. Flow averages 1500 to 2000 gallons per minute and varies seasonally somewhat, but never goes dry. Unprotected.

Spring No. 40. Minnehaha Spring.

Location: At Minnehaha Springs, Pocahontas County.

Physical Data.

Elevation: 2340'. Geological Horizon: Marcellus-Oriskany contact. Temperature: Date observed, 6-1-35, 70.5° F. ; 9-23-35, 72.0° F. . Rate of flow: Date observed, 6-1-35, 1000 gallons per minute. Owner: Richter & Johnson, Washington, D. C.

Chemical Analysis.

Analyst: Homer A. Hoskins.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation	162.0
Ignition loss	13.0
	—
Silica (SiO_2)	10.0
Iron (Fe)	0.84
Calcium (Ca)	40.0
Magnesium (Mg)	6.5
Sodium (Na^+)	5.6
Potassium (K)	3.5

Bicarbonate (HCO_3)	115.0
Sulfate (SO_4)	34.0
Chloride (Cl)	1.5
Nitrate (NO_3)	0.12
Manganese (Mn)	Trace
Hydrogen sulfide gas (H_2S)	None

Total of determined constituents

217.14

Remarks: Very similar to Dunmore Spring.

Comments: This spring arises over a large area, a large part of which is surrounded by a concrete wall to impound the water, but there is no other protection. There are a small, round swimming pool and a small, but very comfortable house on the premises, making the spot ideal for a resort vacation; only one previous analysis was found in the literature; it is annual basis.

Spring No. 40. Minnehaha Springs.

Location: Minnehaha Springs, Pocahontas County.

Physical Data.

Elevation: 2300' R.
Geological Horizon: Marlville-Oridale.
Temperature: 72° F.
Rate of flow: 1040 gallons per minute.
Owner: W. A. H. Hobbs.

Chemical Analysis.

Analyst: B. B. Kaplan, W. Va. Geological Survey.

Constituent.	Parts per Hundred Parts
Ignition loss	0.0
Silica (SiO_2)	0.0
Ferrie oxide and Alumina ($Fe_2Al_2O_5$)	0.0
Calcium (Ca)	0.0
Magnesium (Mg)	0.0
Sodium (Na)	2.7
Potassium (K)	1.0
Carbonate (CO_3)	9.0
Sulfate (SO_4)	4.7
Chloride (Cl)	13.5
Nitrate (NO_3)	Trace
Free Ammonia (NH_3)	0.0
Total of determined constituents	151.01

Remarks: Recalculated to p. p. m. by B. B. Drake from analysis in "Detailed Report on Pocahontas County", W. Va. Geological Survey, (1929).

Bicarbonate (HCO_3)	115.0
Sulfate (SO_4)	34.0
Chloride (Cl)	1.5
Nitrate (NO_3)	0.2
Manganese (Mn)	Trace
Hydrogen sulfide gas (H_2S)	None
 Total of determined constituents	 217.14

Remarks: Very similar to Dunmore Springs.

Comments: This spring arises over a large area, a large part of which is surrounded by a concrete wall to impound the water, but there is no other protection. There are a small, housed swimming pool and a small, but very comfortable hotel on the premises, making the spot ideal for a restful vacation. Only one previous analysis was found in the literature; it is attached hereto.

Spring No. 40. Minnehaha Springs.

Location: Minnehaha Springs, Pocahontas County.

Spring No. 40. Minnehaha Springs.

Location: Minnehaha Springs, Pocahontas County.

Physical Data.

Elevation: 2330' B.

Geological Horizon: Marcellus-Oriskany.

Temperature: 72° F.

Rate of flow: 1040 gallons per minute.

Owner: W. A. H. Hobbs.

Chemical Analysis.

Analyst: B. B. Kaplan, W. Va. Geological Survey.

<i>Constituent.</i>	<i>Parts per Million.</i>
Ignition loss.....	10.05
Silica (SiO_2).....	6.5
Ferric oxide and Alumina ($(\text{Fe}, \text{Al})_2\text{O}_5$).....	0.11
Calcium (Ca).....	39.23
Magnesium (Mg).....	6.45
Sodium (Na).....	7.73
Potassium (K).....	1.62
Carbonate (CO_3).....	69.18
Sulfate (SO_4).....	8.79
Chloride (Cl).....	13.37
Nitrate (NO_3).....	Trace
Free Ammonia (NH_3).....	0.03
Total of determined constituents.....	153.01

Remarks: Recalculated to p. p. m. by B. R. Drake from an analysis in "Detailed Report on Pocahontas County", W. Va. Geological Survey, (1929).

Spring No. 41. Peter McCarthy Spring.

Location: 6 miles N. E. of Huntersville off Browns Creek, Pocahontas County.

Physical Data.

Elevation: 2513'.
 Geological Horizon: Bossardville Limestone.
 Temperature: Date observed, 9-25-35, 63.5° F.
 Rate of flow: Date observed, 9-25-35, 300 gallons per minute.
 Owner: Peter McCarthy Heirs, Huntersville, W. Va.

Chemical Analysis.

Analyst: Homer A. Hoskins.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation	666.0
Silica (SiO_2)	17.0
Iron (Fe)	0.005
Calcium (Ca)	155.0
Magnesium (Mg)	45.0
Sodium (Na)	9.8
Potassium (K)	2.6
Bicarbonate (HCO_3)	120.0
Sulfate (So.)	438.0
Chloride (Cl)	2.3
Nitrate (NO_3)	None
Manganese (Mn)	None
Hydrogen sulfide gas (H_2S)	None
Total of determined constituents	789.705

Remarks: Calcic—sodic—alkaline.

Comments: There are really two springs, and they are warm, so warm that they never freeze until everything else around is frozen, and then only in very cold weather. (Mr. Moody Moore, informant). They are entirely unprotected.

Spring No. 42. Warwick Sulphur Spring.

Location: E. R. Sharp farm, 1 mile southeast of Onoto, Pocahontas County.

Physical Data.

Elevation: 2430'.
 Geological Horizon: Greenbrier-Maccrady contact.
 Temperature: Date observed, 6-2-35, 56° F.; 9-24-35, 60° F.
 Rate of flow: Date observed, 6-2-35, 0.5 gallon per minute;
 9-24-35, 0.25 gallon per minute.
 Owner: E. R. Sharp, Marlinton, W. Va.

SPRINGS OF WEST VIRGINIA

Spring No. 41. Peter McCarthy Spring.

Location: 6 miles N. E. of Huntersville off Browns Creek, Pocahontas County.

Physical Data.

Elevation: 2513'.

Geological Horizon: Bossardville Limestone.

Temperature: Date observed, 9-25-35, 63.5° F.

Rate of flow: Date observed, 9-25-35, 300 gallons per minute.

Owner: Peter McCarthy Heirs, Huntersville, W. Va.

Chemical Analysis.

Analyst: Homer A. Hoskins.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation	666.0
Silica (SiO ₂)	17.0

Rate of flow: Date observed, 2-20-39, 600 gallons per minute.
Owner: Peter McCarthy Heirs, Huntersville, W. Va.

Chemical Analysis.

Analyst: Homer A. Hoskins.

Constituent.	Parts per Million.
Solids after evaporation	666.0
Silica (SiO_2)	17.0
Iron (Fe)	0.005
Calcium (Ca)	155.0
Magnesium (Mg)	45.0
Sodium (Na)	9.8
Potassium (K)	2.6
Bicarbonate (HCO_3)	120.0
Sulfate (SO_4)	438.0
Chloride (Cl)	2.3
Nitrate (NO_3)	None
Manganese (Mn)	None
Hydrogen sulfide gas (H_2S)	None
Total of determined constituents	789.705

Remarks: Calcic—sodic—alkaline.

Comments: There are really two springs, and they are warm, so warm that they never freeze until everything else around is frozen, and then only in very cold weather. (Mr. Moody Moore, informant). They are entirely unprotected.

Family: Calcareous—alkaline.

Comments: There are really two springs, and they are warm, so when the day gets cold everything else around is frozen, and when cold in very cold weather. (M. P. Moody Moore, informant). They are entirely unpreserved.

Spring No. 42. Warwick Sulphur Spring.

Location: E. R. Sharp farm, 1 mile southeast of Otocio, Roane County, W. Va.

Physical Data.

Elevation: 2430'.

Geological Horizon: Greenbrier-Maccrady contact.

Temperature: Date observed, 6-2-35, 56° F.; 9-24-35, 60° F.

Rate of flow: Date observed, 6-2-35, 0.5 gallon per minute;

0.26-35, 0.25 gallon per minute.

Owner: E. R. Sharp, Marlinton, W. Va.

Chemical Analysis.

Analyst: John B. McCue.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation.....	370.0
Ignition loss.....	52.0
Silica (SiO_2).....	5.4
Ferric oxide and Alumina ($\text{Fe}, \text{Al}_2\text{O}_3$).....	2.0
Calcium (Ca).....	84.0
Magnesium (Mg).....	18.0
Sodium (Na) and Potassium (K).....	12.0
Bicarbonate (HCO_3).....	221.0
Sulfate (SO_4).....	107.0
Chloride (Cl).....	11.0
Nitrate (NO_3).....	0.2
Manganese (Mn).....	None
Hydrogen sulfide gas (H_2S).....	7.2
Total of determined constituents.....	467.8

Remarks: Sulphuretted—calcic—sodic.

Comments: Taken as typical of the shale waters, although the flow is small and varies quite a bit. Unprotected. Compare with No. 34. These (34 and 42) were the only sulphur springs visited in this county and are perhaps the only ones.

Spring No. 43. Addison McLaughlin Well.

Location: Below Court-House at Webster Springs, Webster County.

Physical Data.

Elevation: 1462'.

Geological Horizon: Greenbrier Limestone.

Temperature: Date observed, 6-6-35, 55.0° F.; 10-2-35, 54.5° F.

Rate of flow: Date observed, 6-6-35, 5 gallons per minute.

Owner: J. M. Hoover et al., Webster Springs, W. Va.

Chemical Analysis.

Analyst: Homer A. Hoskins.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation.....	6102.0
Ignition loss.....	430.0
Silica (SiO_2).....	14.0
Iron (Fe).....	0.09
Calcium (Ca).....	155.0
Magnesium (Mg).....	46.0
Sodium (Na).....	2006.0
Potassium (K).....	57.0

Chemical Analysis.

Analyst: John B. McCue.

<i>Constituent.</i>	<i>Parts per Million.</i>
Solids after evaporation.....	370.0
Ignition loss.....	52.0

Silica (SiO_2).....	5.4
Ferric oxide and Alumina ($(\text{Fe}, \text{Al})_2\text{O}_3$).....	2.0
Calcium (Ca).....	84.0
Magnesium (Mg).....	18.0
Sodium (Na) and Potassium (K).....	12.0
Bicarbonate (HCO_3).....	221.0
Sulfate (SO_4).....	107.0
Chloride (Cl).....	11.0
Nitrate (NO_3).....	0.2
Manganese (Mn).....	None
Hydrogen sulfide gas (H_2S).....	7.2

Total of determined constituents.....	467.8

Remarks: Sulphuretted—calcic—sodic.**Comments:** Taken as typical of the shale waters, although the

34. ~~These~~ ^{the} springs visited in this county and are perhaps the only ones.

Spring No. 43. Addison McLaughlin Well.

Location: Below Court-House at Webster Springs, Webster County.

Physical Data.

Elevation: 1462'.

Geological Horizon: Greenbrier Limestone.

Temperature: Date observed, 6-6-35, 55.0° F.; 10-2-35, 54.5° F.

Rate of flow: Date observed, 6-6-35, 5 gallons per minute.

Owner: J. M. Hoover et al., Webster Springs, W. Va.

Chemical Analysis.

Analyst: Homer A. Hoskins.

<i>Constituent.</i>	<i>Pars per Million.</i>
Solids after evaporation.....	6102.0
Ignition loss.....	430.0

Silica (SiO_2).....	14.0
Iron (Fe).....	0.09
Calcium (Ca).....	155.0
Magnesium (Mg).....	46.0
Sodium (Na).....	2006.0
Potassium (K).....	57.0



Plate XXVI.—Minnehaha Spring.—This spring, located at the village of the same name in Pocahontas County, supplies a fine indoor swimming pool and a comfortable hotel. The waters are said to have real medicinal value in the treatment of rheumatism and stomach disorders.—Photo by Hoskins.



Plate XXVII.—Dunmore Spring.—This beautiful spring rises at Dunmore, Pocahontas County, in the valley where Lord Dunmore's war was fought. Many improvements have been made by Mrs. Anna Price Hunter, who designed and erected the beautiful statue pictured here.—Photo by Hoskins.



Plate XXVIII.—The McLaughlin Spring.—The waters of this spring can not all be seen because they issue from many crevices in the rock and flow under a mat of vegetation to the stream below. However, it is one of the largest springs in the State and illustrative of the many which water the lands of Pocahontas County. This spring is located at Hepsedam, near Marlinton. A fish hatchery is close by.—Photo by Hoskins.



Plate XXIX.—State Fish Hatchery at Hepsedam.—This fish hatchery, located in Pocahontas County, is supplied by the waters of Averill spring, indicating an important use of spring water in the State. There are several other hatcheries in West Virginia, namely at Petersburg, Ridge and Leetown, all dependent on unfailing springs for their water supply. Without these our streams would soon be fished completely barren of trout and bass.—Photo by courtesy of Major Shawhan.

Pendleton	136	Eagle Rock Spring
Pendleton	137	Dry Run Spring
Randolph	138	Corley No. 9 (Coal Test Well)
Barbour	139	Talbott Heirs No. 2 Test Well
Pleasants	140	Abe Samberson Spring (Well)
Lewis	141	Alum Spring
Wood	142	Borland Mineral Wells
Wood	143	Mineral Wells
Pocahontas	33	Averill Spring
Pocahontas	34	Beaver Creek Sulphur Spring
Pocahontas	35	Curry Spring
Pocahontas	36	Dunmore Drinking Spring
Pocahontas	37	Dunmore Meadow Spring
Pocahontas	38	Dunmore Pool Supply Spring
Pocahontas	39	McLaughlin Spring
Pocahontas	40	Minnehaha Spring
Pocahontas	41	Peter McCarthy Spring
Pocahontas	42	Warwick Sulphur Spring
Pocahontas	144	Linwood Big Spring
Pocahontas	145	Cave Spring
Pocahontas	146	Cochrane Spring

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